

ACCESSION NR: AT4033371

S/2980/63/000/002/0087/0112

AUTHOR: Kondrat'yev, K. Ya.; Burgova, M. P.; Gaymulin, I. F.; Totunova, G. F.

TITLE: Infrared spectrum of absorption by water vapor

SOURCE: Leningrad. Universitet. Problemy fiziki atmosfery*, no. 2, 1963, 87-112

TOPIC TAGS: meteorology, atmospheric physics, infrared absorption spectrum, atmospheric liquid water content, water vapor absorption spectrum

ABSTRACT: In numerous studies of the spectra of liquid water the principal attention has been given to the absorption bands, their structure, position in the frequency scale and influence of impurities; little is known concerning the spectral absorption coefficients in intermediary regions between the bands and in certain cases data are contradictory. The authors therefore decided to determine the values of absorption by liquid water in a broad spectral range. IKS-14 and IKS-12 infrared spectrometers were used. Figures 1-7 of the Enclosure represent experimental results of the authors, constituting the principal contribution of the paper; a 10-page table in the original gives the averaged values of the coefficients. "The authors thank laboratory specialist R. I. Smirnova who did much work in connection with this project." Orig. art. has: 15 figures and 6 tables.

Card

1/9

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824210018-5

ACCESSION NR: AT4033371

ASSOCIATION: Leningradskiy universitet (Leningrad University)

SUBMITTED: 00

DATE ACQ: 23Apr64

ENCL: 07

SUB CODE: ES

NO REF SOV: 013

OTHER: 014

Card

2/9

ACCESSION NR: AP4010235

S/0054/63/000/004/0085/0091

AUTHORS: Kondrat'yev, K. Ya.; Burgova, M. P.; Ashcheulov, S. V.

TITLE: The distribution of energy in the spectrum of thermal radiation in the atmosphere

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, vyp. 4, 1963 85-91

TOPIC TAGS: energy, energy distribution spectrum, thermal radiation, thermal radiation spectrum, atmosphere, atmospheric thermal radiation, spectrometer, black body, gray body

ABSTRACT: This work was undertaken because of inadequacy of existing data, the inadequacy being due chiefly to the low spectral resolution obtained in measuring thermal radiation in the atmosphere and to the lack of sufficient data for comparison with theoretical computations. The data for the present report were obtained chiefly by adaptation of the high-sensitivity portable atmospheric spectrometer (PAS-1) proposed by R. M. Goody (Quart. J. Roy. meteor. soc., 83, 517, 1957) and R. M. Goody and W. T. Roach (Quart. J. Roy. meteor. soc., 84, 1939, 1958).

Card 1/2

ACCESSION NR: AP4010235

The authors suggest improvements in the instrument by: 1) decreasing the number of mirrors to diminish loss in the focusing system and in thermostatic control; 2) addition of a second gray body to speed up calibration; 3) increasing the stability of the incandescent source; and 4) using a monochromator of greater luminosity. Observations included scanning the spectrum at various angles above the horizon (from 0 to 90^0), scanning at a fixed wave length for a given angle and azimuth, and measuring the radiation drop at sky-cloud interfaces and with clouds. It was found that accurate calibration is very essential for precise results. A number of graphs have been plotted to illustrate the spectral distributions of wave lengths ranging from 4.5 to 14.5 millimicrons. These values have been compared with a number of data of other authors and found to be in good agreement. It is thought, however, that improvements in the instrument as suggested by the authors will produce more reliable data and will allow better comparison of experimental and theoretical results. Orig. art. has: 8 figures and 6 formulas.

ASSOCIATION: none [probably Leningradskiy gosudarstvennykh universitet (Leningrad State University)]

SUBMITTED: 25Dec62

DATE ACQ: 03Feb64

ENCL: 00

SUB CODE: AS, PH
Card 2/2

NO REF SOV: 000

OTHER: 008

L 17228-63

Pe-4--GW

BDS/EWT(1)/FCC(w)/ES(v)--AFFTC/AFMDC/ESD-3/APGC--Pe-4/

ACCESSION NR: AP3007338

S/0293/63/001/001/0098/0112

AUTHOR: Kondrat'yev, K. Ya.

TITLE: Some problems of interpretation of the results of measuring outgoing radiation by means of meteorological satellites 67

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 1, 1963, 98-112

TOPIC TAGS: outgoing radiation, meteorological satellite, sensor, solar radiation, radiation balance, inclination angle, radiation angular distribution, radiation heat inflow, Tiros II data, Tiros III data, Tiros II, Tiros III

ABSTRACT: Data on outgoing radiation, obtained by means of meteorological satellites and published in both Soviet and non-Soviet sources, are analyzed, and the principal problems involved in the interpretation of these data are discussed. Three main problems are considered, 1) the dependence of outgoing radiation (sensor readings) on the actual altitude, 2) the correction of

Card 1/3

L 17228-63

ACCESSION NR: AP3007338

sensor readings necessary when the position of the receiving surfaces is other than horizontal, and 3) the relationship between a reading of outgoing radiation on a sensor having a small visual angle and the hemispherical radiation flow on a horizontal surface. At high altitudes both the dilution factor, which indicates the universal ratio of radiation to the square of the distance, and horizontal optical heterogeneity must be taken into account. Measurements of direct solar radiation made in 11 ascents are presented in the form of curves; it is shown that this radiation varies only slightly ($1.85-1.89 \text{ cal/cm}^2 \text{ min}$) at altitudes greater than 12-15 km. If the solar constant is considered to be $S_0 = 2 \text{ cal/cm}^2 \text{ min}$, it follows that solar radiation decreases 5-8% at altitudes greater than 30 km. Curves of the total radiation balance show that radiation cooling and heating zones may occur simultaneously in the troposphere, particularly when clouds are present. Curves of short-wave and long-wave outgoing radiation (F/F_h in percent as a function of α in degrees where F is the radiation inflow on a surface inclined at an angle α and F_h is the

Card 2/3

L 17228-63

ACCESSION NR: AP3007338

Radiation inflow on the horizontal surface) show a decrease in F/F_h from 100 to about 40% with an increase in α from 0 to 90°. The outgoing radiation intensity can be expressed by a Fourier series if the nonisotropic character of the actual radiation field is also taken into account and the angular distribution of the sensitivity of the radiation receiver is known. The meteorological importance of the empirical relationship between outgoing radiation and radiation heat inflow is discussed. It is indicated that the atmosphere responds to even slight variations in the heat balance. Considerably more experimental data from satellites are needed to explain the radiation balance of the "earth-atmosphere" system. The data from Tiros II are considered to be of low quality; the data from Tiros III are somewhat better. Orig. art. has: 6 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 13Apr63

DATE ACQ: 21Oct63

ENCL: 00

SUB CODE: AS

NO REF SOV: 008

OTHER: 012

Card 3/3

L 17162-63

EWT(1)/FCC(w)/PB(v)-2/BDS/ES(v)

AFETC/AFMDC/ESD-3

Pe-4/P1-4/Po-4/Pq-4 TT/GW

ACCESSION NR: AP3007339

S/0293/63/001/001/0113/0125 78

AUTHOR: Borisenkov, Ye. P.; Doronin, Yu. P.; Kondrat'yev, K. Ya.

TITLE: Structural characteristics of the earth's radiation field as a planet

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 1, 1963, 113-125

TOPIC TAGS: Tiros II, outgoing radiation, radiation field, weather satellite, isotropy, atmospheric absorption band, atmospheric window, terrestrial thermal radiation

ABSTRACT: A statistical investigation has been made with the Ural-2 computer of the fields of outgoing radiation (earth's surface to atmospheric system) based on data obtained on channels 1, 2, and 4 of Tiros II and later presented in the Tiros II Radiation Data Catalogue (1961). The mean and most probable values of the structural and correlation functions for each of the 52 orbits are presented. The isotropy of these functions was found to be

Card 1/2

L 17162-63

ACCESSION NR: AP3007339

best achieved for integral radiation and most poorly for radiation in the absorption band of water vapor. The change in structural functions is seen to occur rapidly at the onset and then ceases to grow for all practical purposes. Correlations are made between the structural characteristics of the fields of integral outgoing radiation and outgoing radiation in the "atmospheric window" (8 to 12 μ), and between the radiation fields and the meteorological parameters of the atmosphere. Orig. art. has: 6 figures and 24 formulas.

ASSOCIATION: none

SUBMITTED: 20Feb63

DATE ACQ: 21Oct63

ENCL: 00

SUB CODE: AS

NO REF SOV: 004

OTHER: 006

Card 2/2

KONDRAT'YEV, K.Ya.; FEDOROVA, M.P.

Radiation fluxes emanating from the earth and incident on
differently oriented surfaces at an altitude of 300 km. Kosm.
issl. 1 n .3:443-447 N-D '63. (MIRA 17:4)

ACCESSION NR: AP4009627

S/0293/63/001/003/0448/0459

AUTHOR: Kondrat'yev, K. Ya.; Gayevskaya, G. N.; Nikol'skiy, G. A.

TITLE: Balloon based studies of radiation balance in the Earth's surface-atmosphere system

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 3, 1963, 448-459

TOPIC TAGS: radiation balance, atmosphere, actinometric measurement, weather balloon, balloon based measurement, radiation balance profile, radiation balance analysis, meteorology

ABSTRACT: Standard actinometric measurements (radiation flux, loop oscillograph N-700, continuous recording; air temperature, platinum resistance thermometer; radiation detector temperature, thermocouple; air pressure, atmospheric pressure counter of the radio-sounding equipment) were taken during 11 ascents of free balloons between June 7, 1961 and Nov. 22, 1962 to a maximum altitude of approximately 30 km. Vertical profiles were compiled for the radiation balance and its components for summer and fall seasons. Analysis of the obtained data indicates that the sharpest variations occur in the lower atmospheric layer, which stretches to an altitude of 11 to 12 km in the summer and 8 to 9 km in the fall.

Card 1/2

KONDRATYEV, K. Ya.; BURGOVA, M. P.; MIKHAYLOV, V. V.; GRISHECHKIN, V. S.; PETELIN, G. M.;
OTTO, A. N.; MIRONOVA, Z. F.

"Complex of spectral apparatus for the investigation of the short wave radiative
field in the atmosphere."

report presented at the Atmospheric Radiation Symp, Leningrad, 5-12 Aug 64.

KONDRATYEV, K.Ya.; BORISENKOV, Ye. P.; DORONIN, Yu. P.

"Structural characteristics of the radiative field of the Earth as a Planet." (USSR)

Report submitted for the COSPAR Fifth International Space Science Symposium, Florence, Italy, 8-20 May 1964

KONDRAT'YEV, K. Ya.; FEDOROVA, M. P.

"Fluxes of outgoing radiation of the earth and the problem of heat balance of satellites."

report submitted for 15th Intl Astronautical Cong, Warsaw, 7-12 Sep 64.

Leningrad State Univ.

KONDRAT'YEV, K.Ya., doktor fiz.-mat. nauk, prof.; KROSHKIN, M.G.,
kand. fiz.-mat. nauk; MORACHEVSKIY, V.G., kand. fi-
mat. nauk; FEDOROV, Ye.K., akademik, red., VETLOV, I.P.,
kand. fiz.-mat. nauk, otv. red.; BOYKOVA, A.G., red.

[Our planet from space; an album of photographs] Nasha
planeta iz kosmosa; al'bom fotografii. Leningrad, Gidro-
meteoizdat, 1964. 50 p. (MIRA 18:2)

KONDRAT'YEV, K.Ya.; NIYLISK, Kh.Yu.

Some results of theoretical calculations of the angular
distribution of heat radiation from the earth as a planet
under real conditions. Trudy GGO no.166:62-83 '64.
(MIRA 17:11)

ROBINSON, J. B.; TALENTEVSKAYA, L. B.

Angular radiation of heat radiation from the system earth-atmosphere in various spectral regions. Study 670 no. 166: 84-101, 164. (MIRA 17:11)

ACCESSION NR: AP4026236

S/0293/64/002/001/0071/0097

AUTHOR: Budy*ko, M. I.; Kondrat'yev, K. Ye.

TITLE: Heat balance of the earth

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 1, 1964, 71-97

TOPIC TAGS: meteorology, atmospheric heat balance, evaporation, radiation balance, climate

ABSTRACT: The use of new observational data and the development of new computational methods has made it possible for the Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory) to compile a new atlas of the heat balance of the earth. The atlas contains 69 world maps. Among the series are maps of the mean long-term values of total radiation incident on the earth's surface, the radiation balance of the earth's surface, expenditures of heat on evaporation, evaporation and turbulent heat exchange of the earth's surface. Each of the series consists of 13 maps, 12 monthly and 1 annual. Also included are maps of mean annual conditions of redistribution of heat in the oceans by sea currents, the radiation balance of the system "earth's surface - atmosphere", the increment of heat from condensation and the redistribution of heat in the atmosphere by air currents. The maps in the new atlas are much more detailed and accurate than the maps prepared

Card 1/73

ACCESSION NR: AP4026236

by the Main Geophysical Observatory in the early 1950's. Examples of the maps are shown in the Enclosure. Fig. 1 shows total solar radiation ($\text{Cal/cm}^2\cdot\text{month}$) incident on the earth's surface. It can be seen that the total radiation in the high latitudes in the summer months is very great. This fact indicates that the low summer temperatures in the high latitudes are not the result of a small quantity of incident radiation; the ice and snow cover with its high albedo is the responsible factor. Fig. 2, a map of the radiation balance of the earth's surface ($\text{Cal/cm}^2\cdot\text{month}$) shows that the mean monthly values of the radiation balance over the greater part of the earth's surface are positive as a result of the greenhouse effect. Fig. 3 shows the heat balance losses ($\text{Cal/cm}^2\cdot\text{month}$); for the greater part of the earth's surface the principal loss is on heat expenditure on evaporation, which varies in wide limits on both the oceans and continents. The mean losses of heat on evaporation usually are far greater than the increment from heat of condensation. Fig. 4 shows turbulent heat exchange between the earth's surface and the atmosphere ($\text{Cal/cm}^2\cdot\text{month}$) and confirms that turbulent flux of heat from the earth's surface to the atmosphere usually is far greater than the flux from the atmosphere to the earth. Maps of the mean latitudinal values of the radiation balance of the system "earth's surface - atmosphere" show that the earth accumulates radiated heat in the low latitudes, approximately to 45° N. and S. In this zone the excess is transformed into energy which is transported by air and sea currents into the higher latitudes. Meridional transport of heat in the hydrosphere con-

Card 2/13

KONDRAT'YEV, K.Ya.

Thirteenth General Assembly of the International Geophysical and
Geodesic Association. Kosm. issl. 2 no.1:162-173 Ja-F '64.
(MIRA 17:4)

ACCESSION NR: AP4043497

S/0293/64/002/004/0603/0609

AUTHOR: Kondrat'yev, K. Ya., Timofeyev, Yu. M.

TITLE: Fine structure of the thermal radiation spectrum of the earth's atmosphere

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 4, 1964, 603-609

TOPIC TAGS: meteorology, atmosphere, atmospheric thermal radiation, atmospheric outgoing radiation, satellite meteorology, atmospheric emission spectrum, thermal radiation spectrum

ABSTRACT: This article discusses the difficulties involved in investigating the composition and structure of the earth's atmosphere on the basis of data from measurements of the spectral distribution of outgoing radiation by means of satellites. Modern measuring instruments do not make it possible to resolve the fine structure of the spectrum on the basis of satellite measurements (the principal hindrance is the inadequate sensitivity of present-day infrared radiation detectors). Accordingly, a different solution must be found. The authors present an example of how the spectral distribution of energy in the region of a very strong absorption band can be obtained (such as in the 15μ CO_2 band). The article includes computations of the profile of isolated emission lines of different intensities at different heights in the atmosphere. There is an analysis of the change of the

Card 1/2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824210018-5

ACCESSION NR: AP4043497

profile of lines with height, assuming a standard stratification of the atmosphere. It was discovered that there are phenomena of "reversal" and "splitting" of lines. In the examples presented the authors have shown the importance of investigating the fine structure of the atmospheric emission spectrum for solution of "inverse" problems in spectroscopic studies of the atmosphere. It is shown that in the simplest case of an isolated spectral line its profile experiences an extremely complex transformation in the atmosphere. This means that averaging, smoothing the fine structure of the emission spectrum, can make the interpretation of experimental data extraordinarily difficult (or impossible). It is emphasized that experimental investigation of the fine structure of the emission spectrum is the most promising method for solution of "inverse" problems in the physics of planetary atmospheres. Orig. art. has: 7 formulas and 5 figures.

ASSOCIATION: None

SUBMITTED: 02Jan64

ENCL: 00

SUB CODE: ES

NO REF SOV: 003

OTHER: 001

Card 2/2

PINUS, Naum Zinov'yevich; SHMETER, Solomon Moiseyevich;
KONDRAT'YEV, K.Ya., otv. red.; BELEN'KAYA, L.L., red.

[Aerology] Aerologiya. Leningrad, Gidrometeoizdat. Pt.2.
1965. 350 p. (MIRA 18:11)

KONDRAT'YEV, Kirill Yakovlevich; KIRILLOVA, T.V., otv. red.;
BELEN'KAYA, L.L., red.

[Actinometry] Aktinometriia. Leningrad, Gidrometeoizdat,
1965. 690 p. (MIRA 18:5)

KONDRAT'YEV, K.Ya.

Investigating the earth's atmosphere by means of rockets and
satellites. Kosmos no.2:33-65 '65. (MIRA 18:9)

L 21743-66 EWT(1) GW

ACC NR: AT6007606

SOURCE CODE: UR/2960/65/000/003/0003/0017

AUTHORS: Kondrat'yev, K. Ya. (Professor); Gayevskaya, G. N. 36

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet) B+1

TITLE: Radiative temperature variations in the free atmosphere 12, 14, 15

SOURCE: Leningrad. Universitet. Problemy fiziki atmosfery, no. 3, 1965, 3-17

TOPIC TAGS: thermal radiation, atmospheric radiation, atmospheric temperature, free atmosphere, troposphere, actinometry, aerostatics, atmospheric sounding

ABSTRACT: Combined experimental data on the total radiant heat influx and on its components in the free atmosphere are given. In 1960--1963 actinometric aerostatic apparatus was developed at Leningrad State University, and 13 flights of the apparatus to altitudes of 27--29 km were made. Vertical profiles of direct solar, total, and reflected shortwave radiation, and the total radiation balance were obtained as reported by K. Ya. Kondrat'yev, G. N. Gayevskaya, and G. A. Nikol'skiy (Vertikal'nyy profil' radiatsionnogo balansa i yego sostavlyayushchikh v svobodnoy atmosfere v dnevnoye vremya. ISZ, No. 14, 1962) (see Fig. 1). The radiation balance for any level of the atmosphere can be calculated as the difference

$$B(z) = F^{\downarrow}(z) - F^{\uparrow}(z),$$

Card 1/3

L 21743-66

ACC NR: AT6007606

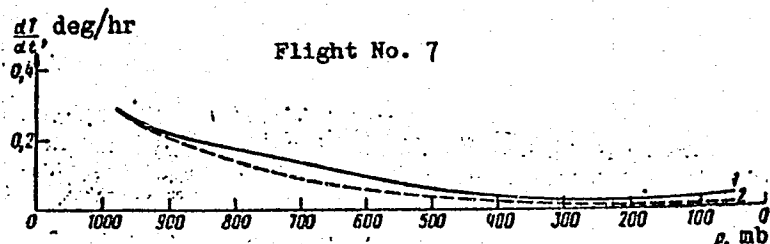


Fig. 1. Radiative temperature variations on 14 November 1961: 1 - from data on shortwave balance; 2 - from data on total radiation balance.

where F^{\downarrow} and F^{\uparrow} are the descending and ascending fluxes, and z is the level. As a rule, radiation heating decreases with an increase in layer thickness (see Fig. 2). The problem of developing methods of direct measurement of radiant heat influx is considered urgent.

Card 2/3

L 21743-66

ACC NR: AT6007606

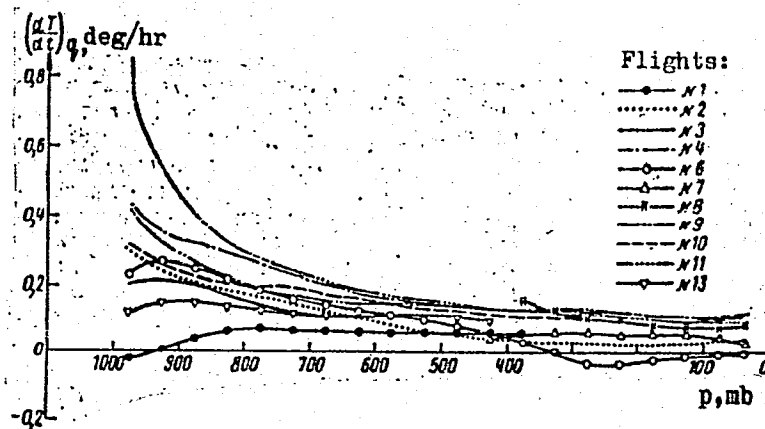


Fig. 2. Radiative temperature variations due to absorption of shortwave radiation as functions of thickness of the sounding layer.

Orig. art. has: 4 formulas, 10 graphs, and 1 table.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 021/ OTH REF: 012
Card 3/3 ULR

L 17810-66 EWT(1) GW

ACC NR: AT6007607

SOURCE CODE: UR/2960/65/000/003/0018/0023

AUTHOR: Kondrat'yev, K. Ya.; Gayevskaya, G. N.; Nikol'skiy, G. A.

ORG: *none*

TITLE: The radiation balance of the atmosphere

SOURCE: Leningrad. Universitet. Problemy fiziki atmosfery, no. 3, 1965, 18-23

TOPIC TAGS: radiation balance, shortwave radiation, outgoing thermal radiation, effective radiation, direct solar radiation

ABSTRACT: The radiation balance of the atmosphere is the difference between the radiation balances of the earth's surface and atmosphere system and the balance of the ground. It is equal to the difference between the short-wave radiation absorbed in the atmosphere and the difference between the outgoing thermal radiation and the effective radiation of the ground. Both radiations forming the radiation balance of the atmosphere are variable in individual atmospheric layers, which causes the diurnal and seasonal changes in the balance. The mean annual radiation balance of the earth-and-atmosphere system is positive in the latitude belt with $\phi < 40^\circ$. The radiation balance of the ground is positive except at the polar caps. The diurnal rate of the atmospheric radiation balance is positive in the daytime and negative at night. The state of atmospheric radiation balance depends upon the balance character of individual atmospheric layers. Measurements in the summer of 1962 showed that the radiation

Card 1/2

L 17810-66

ACC NR: AT6007607

balance of the atmosphere and that of the earth-and-atmosphere system were positive and variable. The direct solar radiation measured at a height of 27 km was 1.41—1.59 cal/cm².min at individual launches. The albedo of the system at the height of 27 km was variable; on cloudless days it was about 19% and on cloudy days, about 34%. Orig. art. has: 1 figure, 1 table, and 4 formulas. [EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 005/ ATD PRESS:

4211

Card

2/2

L 17808-66 EWT(1) GW

ACC NR: AT6007608

SOURCE CODE: UR/2960/65/000/003/0024/0047

AUTHOR: Kondrat'yev, K. Ya. (Professor); Mironova, Z. F.; Otto, A. N.

ORG: none

TITLE: The spectral albedo of natural grounds

SOURCE: Leningrad. Universitet. Problemy fiziki atmosfery, no. 3, 1965, 24-47

TOPIC TAGS: spectral albedo, spectrophotometric property, shortwave range, long-wave range, chlorophyll, absorption band

ABSTRACT: The spectral albedo of natural grounds was measured by special instruments. The program of measurements was so planned that changes of spectral albedos might be detected at various typical grounds. Measurements were carried out above fields of lucerne in the Odessa region, above crop fields in the Poltava region, above clover and lupine fields and water surface in Lithuania, and above snow, asphalt, and concrete in the Leningrad region. All observation data were divided into three classes according to their spectrophotometric properties. The albedo of the first class increased from the short-wave range to long waves. Soils, roads, and other free surfaces are included in this class. The second class of albedo has a maximum from 500 to 560 mμ and a minimum from 650 to 680 mμ in the visible spectral range. The albedo attained great values in the range from 730 to 1000 mμ. Vegetation covers formed this albedo class. The third albedo class consisted of snow and water sur-

Card 1/2

L 17808-66

ACC NR: AT6007608

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824210018-5

faces, and was characterized by slight variability. Two kinds of albedos were computed: A₁ from mean reading data symmetrical to true noon, and A₂ as mean values derived from three meteorological readings. Herbage covered with soft vegetation have similar spectral albedos within the range from 420 to 900 mμ and an increase of spectral albedo within the interval of 420—550 mμ. At 700 mμ a sudden sharp increase occurs which attains its maximum in the 720—1000-mμ interval. Soft and dense herbages of grass and cabbage have the absorption lines of chlorophyll, but surfaces of ripening corn and sunflowers have no chlorophyll absorption bands. The change of spectral albedo depends upon the phase of vegetation. The albedo of a snow surface is unstable and depends upon the physical state of the snow and illumination conditions. The albedo of a water surface changes slightly depending upon the wavelength. Orig art. has: 11 figures and 5 tables. [EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005/ ATD PRESS: 4211

Card

2/2

REF ID: A66145 EMT(1)/FSS-2/FS(v)-3/ENG(v) Po-4/Pe-5/Pq-4/Pae-2/Pi-4 TI/GM

1965/0036/004

1965/0036/004

Author: K. Ya. (Doctor of physico-mathematical sciences, Professor)

Subject: Practical use of radiation data of weather satellites

SOURCE: Meteorologiya i gidrologiya, no. 4, 1965, 36-41

TOPIC TAGS: weather forecasting, weather communication, weather satellite, cloud, atmosphere, Tiros satellite, Explorer satellite

Several problems in obtaining and processing information for weather forecasting. Particular emphasis is placed on the use of weather satellite data. In obtaining this type of information, the use of the atmospheric balance system of the earth is considered. The atmospheric balance system is described by the formula $R_0 = Q_0(1 - A_0) - E_{\infty}$, where R_0 is the solar radiation at the limits of the atmosphere; A_0 - the albedo of the earth's surface-atmosphere system, E_{∞} is the exiting longwave radiation. The accurate determination of A_0 and E_{∞} is largely the function of satellites. The performances of the Tiros and Explorer satellites were reviewed in relation to their information

Card 1/2

L 43014-65

ACCESSION NR: AP5008770

gathering capabilities. Further problems considered are: 1) identifying cloud zones and patterns, and 2) the temperature and height of clouds and humidity in the troposphere. The use of satellite data in constructing atmospheric models is discussed. Reference is made to the atmospheric models proposed by E. Raschke (F. J. Raschke, Evaluation of TIROS III satellite data, Journal of Applied Meteorology, Vol. 11, No. 4, 1972, pp. 600-605). The models are shown to be suitable.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)


SUBSCRIPTION: 00

ENCL: 00

SUB CODE: ES, DP

NO REF SOV: 003

OTHER: 010


Card 2/2

L 16980-66 EWT(1) GW

ACC NR: AP6002348

SOURCE CODE: UR/0054/65/000/004/0080/0086

AUTHORS: Kondrat'yev, K. Ya.; Ashcheulov, S. V.; Styro, D. B.

ORG: none

39
38
B

TITLE: A comparison of measured and computed spectra of natural atmospheric radiation

12,44,55
SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 4, 1965, 80-86

TOPIC TAGS: atmospheric radiation, radiation spectrum, spectrophotometer, black body radiation

12,44,55
ABSTRACT: A portable IR spectrophotometer for measuring natural atmospheric radiation was developed at the Department of Atmospheric Physics of Leningrad University. The device is described briefly in the paper, and the optical system is illustrated in Fig. 1. The principal difficulty in using the instrument was calibration; measurement of small values also proved to be a problem. Measured values were compared with computed values, and it was found that the radiation bands of water vapor (6.3μ), carbon dioxide (15μ), and, in the range

Card 1/3

UDC: 551.521.32 2

L 16980-66

ACC NR: AP6002348

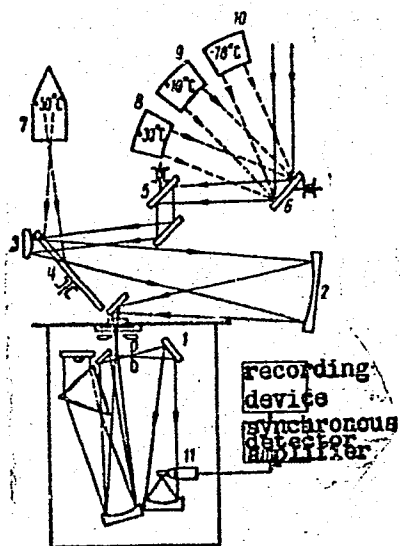


Fig. 1. Optical system of an IR field spectrophotometer. 1 - Prism monochromator; 2,3 - focusing mirrors; 4 - mirror modulator; 5,6 - coelostat mirror; 7 - referent black body; 8,9,10 - calibrating gray bodies; 11 - optical-acoustical receiver.

Card 2/3

L 16980-66

ACC NR: AP6002348

from 15 to 25 μ , atmospheric radiation coincide with black body values. This is explained by the almost perfect transparency of the atmosphere in these parts of the spectrum. In the range 8 to 13 μ , the values differ appreciably, the difference declining as the angle of observation approaches the horizontal. It is concluded that theoretical considerations cannot properly evaluate the effect of the numerous emitters affecting the value of total radiation in the latter spectral range. Orig. art. has: 5 figures, 1 table, and 7 formulas.

SUB CODE: 04/

SUBM DATE: 10Oct64/

ORIG REF: 003/

OTH REF: 008

Card 3/3 vmb

KONDRAT'YEV, K.Ya., doktor fiziko-matematicheskikh nauk, prof.

State of meteorology in Japan. Meteor. i gidrol. no.7:53-55
Jl '65.

(PUB 18:6)

KONDPAT'YEV, K.M., doktor fil.-matem.nauk, prof.; LEVDEKOVSKIY, Ya.S., doktor
fil.-matem.nauk, prof.

International conference on meteorological problems of the strato-
sphere and mesosphere. Meteor. i gidrol. no.9:39-42 S '65.
(MIRA 18:8)

KONDRAT'YEV, K.Ya., prof.

Outgoing radiation and radiant influx of heat. Meteor. i
gidrol. no.11:57-61 N '65. (MIRA 18:11)

KONDRAT'YEV, K.Ya.; MALKEVICH, M.S.

The 15th International Astronautical Congress. Izv. AN SSSR. Fiz.
atm. i okeana 1 no.1:122-124 Ja '65. (MIRA 18:5)

no. 1/1971(1) p-5/pae-2 GW

AP5009235

UR/0362/65/001/002/0175/0192

Radnitsky, K. Ya.; Badinov, I. Ya.; Ashcheulov, S. V.;

Equipment for studying the infrared spectrum and
radiation of the atmosphere

USSR. Izvestiya. Fizika atmosfery i okruzh., v. 1, no. 2,
1965, 175-192

TOPIC TAGS: radiation transfer, atmospheric radiation, infrared rad-
iation, thermal radiation, spectrophotometer, photoelectric tracking
system, monochromator, hygrometer, airborne spectrometer

ABSTRACT: Equipment for measuring the spectral characteristics of the
atmosphere is described; this included an automatic infrared solar
spectrophotometer, an infrared solar hygrometer, automatic airborne
radiometer, and atmospheric spectrophotometer for still use.
The automatic solar spectrophotometer is equipped with a mono-
chromator, a photoelectric tracking system, and electromechanical
drives which keep the monochromator constantly focused within 30"
of the center of the solar disk. The sun was the source of radiation.

L 45646-65

ACCESSION NR: AP5009235

The error in measurement of the solar spectra was 2%. Water vapor is the principal variable component of the atmosphere with absorption in the infrared region of the spectrum. The measurement of the water vapor content in the atmosphere is also required for the measurements of the spectral transparency of the solar hygrometer used for such measurements is a two-lens system which focuses on the sun and measures the radiation intensity within and outside the absorption band. Schematics and drawings are given for all instruments. Orig. art. has: 11 figures [14]

ASSOCIATION Leningradskiy Gosudarstvennyy Universitet (Leningrad State University)

14 Jul 64

ENCL: 00

SUB CODE: ES

NO REF SOV: 021

OTHER: 026

ATD PRESS: 3244

Card 2/2

L 52749-65 EMT(1)/EWG(v) Pe-5/Pae-2 CW

ACCESSION NR: AP5013174

UR/0362/65/001/004/0363/0376

29
28
B

AUTHOR: Kondrat'yev, K. Ya., Badinov, I. Ya., Ashcheulov, S. V., Andreyev, S. D.

TITLE: Some results of surface measurements of atmospheric infrared absorption and emission spectra

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 4, 1965, 363-376

TOPIC TAGS: atmospheric infrared absorption, atmospheric infrared emission, atmospheric optical thickness, water vapor absorption, aerosol attenuation, solar infrared radiation measurement, thermal radiation spectrum

The paper contains 12 Soviet and 28 Western references. Beginning with the paper by Kondrat'yev et al. (1963) on atmospheric absorption caused by the $8-12 \mu$ water band, the authors collected and analyzed the data on surface infrared transparency and heat radiation of the entire thickness of the atmosphere within its $8-12 \mu$ "transparency window" and in the regions adjacent to it. They determined the magnitude of the atmospheric optical thickness at various wavelengths and divided it into components determining the influence of the water vapor, long wave radiation, aerosol, and other factors. They also determined the geographical changes in the infrared transparency of the entire

L 52749-65

ACCESSION NR: AP5013174

atmosphere are also correlated. The paper also reports on determinations of the absolute spectra of the solar radiation above the atmosphere from the measured values of the incident radiation and atmospheric absorption at the surface of the earth, and compares them with the previously known data. A study of the energy distribution within the spectrum of the atmospheric infrared radiation is followed by a discussion of the basic

principles of the spectroscopy of the

atmosphere. In agreement with the findings of the present study, the

results of the present study

of the fine structure of the absorption spectra of the

atmosphere should be compared

with the results of the free atmosphere measurements.

[08]

Author: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

11104

ENCL. 00

SUB CODE: ES, AA

NO REF SOV: 012

OTHER: 028

ATD PRESS: 4013

Q3rd 2/2

KONDRAT'YEV, K.Ya.

Conference on the meteorology of the stratosphere and mesosphere.
Izv. AN SSSR. Fiz. atm. i okeana 1 no.8:884-890 Ag '65. (MIRA 18:9)

KONDRAT'YEV, K.Ya.; BURGOVA, M.P.; MIKHAYLOV, V.V.; GRISHECHKIN, V.S.

Spectral composition of short-wave solar radiation. Izv.
AN SSSR. Fiz. atm. i okeana 1 no.9:929-940 S '65. (MIRA 18:9)

1. Leningradskiy gosudarstvennyy universitet.

15010-65 BWT(1)/EWG(v) Pe-5/Pae-2 ^{OW}
 ACCESSION NR: AP5005440 S/0293/65/003/001/0111/0127

Author: Kondrat'yev, K. Ya.; Niyfisk, Kh. Yu.

Summary: Results of the determination of the geographical distribution of ascending terrestrial and atmospheric thermal radiation for specific situations

Source: *Naucheskkiye issledovaniya*, v. 3, no. 1, 1965, 111-127

Keywords: terrestrial radiation, outgoing radiation, atmospheric radiation, cloud radiation, atmospheric pressure, cloud, radiation flux, radiation distribution

ABSTRACT: The authors attempt to analyze the relationship between fluxes of ascending thermal radiation and the principal meteorological and synoptic characteristics for some specific synoptic situations. The values of the radiation fluxes were computed for the 40-km level in the earth's atmosphere in four parts of the infrared region of the spectrum: 2.27-250, 4.88 - 8.70, 10.55 - 11.01 and 12-18 μ . A graphic method (radiation nomogram) proposed earlier was used in the computations. In this paper, the method is generalized for computation of the fluxes in different

Card 1/3

1 35019-65

ACCESSION NR: AP500440

spectral ranges. It is assumed that the earth and clouds radiate as an absolutely black body at a temperature equal to air temperature at the level of the earth's surface or the cloud level. The initial data used were the results of aerological soundings at a number of points in Eurasia on three dates: 20 July 1956, 25 February 1957 and 30 March 1960 (all soundings were at night). Maximum soundings were taken up to 20 km. A standard value was used for CO₂ content, stratospheric humidity, etc. were taken from the literature and ozone was neglected. Several examples are given of charts compiled to show the geographical distribution of fluxes of outgoing thermal radiation at the 40 km level. All four spectral intervals showed a similar pattern for the geographical distribution of ascending thermal radiation, changing appreciably only with a change in the synoptic situation. It was found that the value of integral ascending radiation at the 40 km level is in the range 10-35 mW·cm⁻² and the values of ϵ (where ϵ is the index of thermal radiation and i denotes some spectral interval) in the intervals 10.15-11.01 and 4.98-8.70 μ fall in the range 0.12-0.14 and 0.4-3.6 mW·cm⁻², respectively. The winter values of ascending thermal radiation in the region 12-20 km level vary in the range 1-6 mW·cm⁻². There is good agreement between these values and the outgoing thermal radiation determined from Titov's

Card 2/3

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ACCESSION NR: AP5005440

and Explorer 7 data. Cloud cover was found to be one of the principal factors determining the radiation value, especially high cold opaque clouds which screen the lower layers of the atmosphere from the influence of terrestrial radiation and radiation from the atmosphere below the cloud layer. It is shown that a study of the field of outgoing thermal radiation can yield much information on the pressure field at the earth's surface, cloud cover and other atmospheric processes. "The authors thank Candidate of Geographical Sciences V. I. Yegorova for preparation of the initial meteorological data and especially for determination of the values of the upper cloud boundary for the mentioned dates". Orig. art. has 3 formulas, 6 figures and 3 tables.

ASSOCIATION: na

SUBMITTED: 18Feb64

ENCL: 00

SUB CODE: ES

NO REF SOV: 007

OTHER: 016

Card 3/3

EWG(1)/EWG(v) Pe-5 (Pas-2) CH

433/0443

Author: Benisenkov, Ye. P.; Doronin, Yu. P.; Kondrat'yev, K. Ya.

... characteristics of fields of outgoing radiation according
... satellites Tiros II and Tiros III and their interpretation

... *... Reskiye Issledovaniya*, v. 3, no. 3, 1968, 438-447.

TOPIC TAGS: radiation field, structural function, satellite, shortwave radiation, correlation function, upwelling radiation

The temperature of the radiation field leaving the earth's atmosphere was determined from the integral radiation data obtained by the satellites "Tiras II" and "Tiras III". To characterize the winter conditions, a special coefficient was introduced for comparing the radiation measured by the two satellites. The results show that the integral radiation obtained from measurements made by the two satellites differs from one another, and this difference increases with distance. The radiation measured by these satellites depended upon the reflectivity of the surface of the regions over which they flew. Integral functions were calculated for the regions over which they flew. It is more difficult to obtain data from satellite observations than it is more

Card . . .

L 29145-66 EWT(1)/FCC GW SOURCE CODE: UR/0050/65/000/009/0020/0026
 ACC NR: AF601B679
 AUTHOR: Votlov, I. P. (Candidate of physicomathematical sciences); Gayovskiy, V. L.
 (Candidate of physicomathematical sciences); Ter-Markaryants, N. Ye. (Candidate of
 physicomathematical sciences); Guseva, L. N.; Dombkovskaya, Ye. P.; Kondrat'yov, K. Ye.
 (Professor); Nordborg, V. (Doctor; USA)
 ORG: Main Geophysical Observatory (Glavnaya geofizicheskaya observatoriya); Leningrad
State University (Leningradskiy gosudarstvennyy universitet); World Meteorological
Center (Mirovoy meteorologicheskyy tsentr)
 TITLE: Experience in analyzing the infrared image of cloud cover obtained by the
 meteorological satellite Nimbus I
 SOURCE: Meteorologiya i gidrologiya, no. 9, 1965, 20-26
 TOPIC TAGS: meteorologic satellite, cloud cover, satellite data analysis, satellite
 photography, IR photography
 ABSTRACT: This article presents the results of a comparative analysis of
 ordinary meteorological data and data on cloud cover obtained using
 the satellite Nimbus I. The article is accompanied by reproductions of
 two Nimbus infrared cloud images obtained at midnight on 2 and 6 Sep-
 tember 1964 over the Soviet Union. Much of the information is such as
 contained in recent articles on the Nimbus photos published in the Ameri-
 can press, but of course the photographs are compared with Soviet meteorolo-
 gical data for the photographed area. It was found that the principal
 difficulties involved in recognition of the character of cloud cover
 from the photographs is that they show only relatively large details
 and the smaller details, often important in interpretation, cannot be
 seen. The following tentative conclusions are drawn: 1. The infrared
 image obtained from a satellite gives a more complete and informative
 picture of cloud cover distribution than a synoptic map. The photographs,
 even for a region with a dense network of meteorological stations, make
 it possible to refine the distribution of cloud cover over the earth's
 surface. 2. In some cases data on the radiation balance can be used to
 aid interpretation of satellite observations. Orig. art. has: 3 figures and
 1 table. [JPRS]
 UDC: 551.576:551.507.362.2
 Card 1/2

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824210018-5

ACC NR: AF601B679

logical data for the photographed area. It was found that the principal
 difficulties involved in recognition of the character of cloud cover
 from the photographs is that they show only relatively large details
 and the smaller details, often important in interpretation, cannot be
 seen. The following tentative conclusions are drawn: 1. The infrared
 image obtained from a satellite gives a more complete and informative
 picture of cloud cover distribution than a synoptic map. The photographs,
 even for a region with a dense network of meteorological stations, make
 it possible to refine the distribution of cloud cover over the earth's
 surface. 2. In some cases data on the radiation balance can be used to
 aid interpretation of satellite observations. Orig. art. has: 3 figures and
 1 table. [JPRS]

SUB CODE: 04, 22, 14 / SUBM DATE: 23Apr65

Card 2/2 CC

L 38219-66 EWT(1)/FSS-2 TT/JT GW
ACC NR: AP6019458 (N) SOURCE CODE: UR/0384/66/000/001/0027/0032

AUTHOR: Kondrat'yev, K. Ya. (Professor); Gayevskiy, V. L. (Candidate of physico-mathematical sciences); Konashenok, V. N.; Reshetnikov, A. I. 118
B

ORG: none

TITLE: Lunar meteorological observatory

SOURCE: Zemlya i vselennaya, no. 1, 1966, 27-32

TOPIC TAGS: lunar base, lunar communication, meteorologic satellite, laser application

ABSTRACT: The establishment of an observatory on the moon for the purpose of carrying out meteorological, astrophysical, and geophysical studies of the earth is discussed. While the advantages of a moon-based observatory are stressed, the authors emphasize that it will not obviate the need for earth satellites for meteorological studies. The lunar observatory will be especially important in investigating circulation in the earth's atmosphere. The use of laser beams in lunar-based studies of the earth is mentioned. One of the principal difficulties is the need to record small energy flows in a brief time span. This problem may be partially solved through the use of large mirrors which will serve as boosters. Orig. art. has: 2 photographs.

SUB CODE: 22,04,03/

SUBM DATE: none

Card 1/1 *llb*

L 44325-66 EWT(1) TT/JKT/GW
ACC NR: AP6024385 (N) SOURCE CODE: UR/0050/66/000/007/0045/0051
APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824210018-5

AUTHOR: Kondrat'yev, K. Ya. (Professor)

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: The planetary system of meteorological observations

SOURCE: Meteorologiya i gidrologiya, no. 7, 1966, 45-51

TOPIC TAGS: meteorologic ^{tower} ~~observation~~, meteorologic observation ~~system~~, aerology, ~~artificial earth~~ ^{satellite}, ~~observation~~ ^{spaceborne} ~~atmospheric observation~~ ^{meteorologic}

ABSTRACT: The purpose of the present article is to discuss the fundamental aspects of a possible system of meteorological observations on a planetary scale. The following are considered to be the fundamental components of such a system: 1) the totality of standard methods of observation (Earth-based, meteorological, aerological, radio-meteorological, ship-based, aircraft-based, etc.); 2) meteorological satellites; 3) a system of meteorological-balloon sondes, marine buoys, and land-based automatic meteorological stations which, in conjunction with satellites, collect and transmit information received; 4) piloted orbital cosmic laboratories; and 5) a lunar meteorological observatory for observing the Earth. Orig. art. has: 1 table. [26]

SUB CODE: 04,22/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 004

UDC: 551.501

Card 1/1 *blg*

L 22151-66 EWT(1) GW

ACC NR: AP6012929

SOURCE CODE: UR/0362/66/002/001/0052/0063

AUTHOR: Kondrat'yev, K. Ya.---Kondratiev, K. Y.; Styro, D. B.; Zhvalev, V. F.

27
B

ORG: Leningrad State University

TITLE: Radiant heat flux in the spectral region 4-40 μ m at different levels in the atmosphere

SOURCE: AM SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 1, 1966, 52-63

TOPIC TAGS: atmospheric thermodynamics, earth radiation, atmospheric radiation, troposphere, atmospheric temperature, atmospheric humidity, atmospheric transparency

ABSTRACT: The authors have analyzed the results of computations of the intensity of the ascending and descending fluxes of radiation at different isobaric levels. The intensity of ascending radiation varies from 700 ("window of transparency") to 50 μ W cm⁻²sr⁻¹ μ m⁻¹ (absorption band of water vapor with a center at about 6.3 μ m) at the "upper boundary" of the atmosphere. For descending radiation the limits of variation are broader: from 600 (absorption band of carbon dioxide with a center at 14.8 μ m) at the level of the earth's underlying surface to 10⁻⁵ μ W cm⁻²sr⁻¹ μ m⁻¹ (window of transparency) at a height of 28 km. At the "upper boundary" of the atmosphere about 90% of the total radiation is accounted for by radiation of the underlying surface in the range of wavelengths 3-13 μ m (an exception is Card 1/2

UDC: 551.521.32

study of the variations of the radiant heat flux caused by changes of atmospheric stratification. Orig. art. has: 10 figures and 4 formulas. [JPRS]

SUB CODE: 04 / SUBM DATE: 07Jun65 / ORIG REF: 004 / OTH REF: 005

Card 2/2 *dlr*

L 22612-66 EWT(1) CW
 ACC NR: AP6011369 SOURCE CODE: UR/0362/66/002/003/0272/0289

AUTHOR: Kondrat'yev, K. Ya. (Doctor of physico-mathematical sciences); Timofeyev,
 Yu. M. 28

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet) B

TITLE: The transmission functions for the rotation band of water vapor

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 3, 1966, 272-289

TOPIC TAGS: water, transmission function, rotation spectrum, water vapor, absorption spectrum, radiation transfer

ABSTRACT: 2,44,5
Transmission functions for the rotation band of water vapor were calculated for eight spectral regions in the wavelength range from 20 to 50 μ . The quantum-mechanical data for the position intensities and halfwidths of rotation lines were used in the calculations. The dependence of the transmission function on the amount of the absorbing substance and on pressure, temperature, and the spectral region was investigated. The effect of neighboring lines on the transmission of a given spectral region was studied, as was the problem of the temperature dependence of the transmission functions, which was considered by introducing effective mass. The applicability of the absorption band models was considered. Orig. art. has: 11 formulas and 9 figures. [CS]

SUB CODE: 07/ SUBM DATE: 02Jul65/ ORIG REF: 003/ OTH REF: 017/ ATD PRESS: 4228
 Card 1/1 1/4 UDC: 551.593.52

L 29261-66 -ENT(1) GW
ACC NR: AP6019346

SOURCE CODE: UR/0362/66/002/002/0121/0136

AUTHOR: Kondrat'yev, K. Ya.; Niylik, Kh. Yu.; Noorma, R. Yu.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet);
Institute of Physics and Astronomy (Institut fiziki i astronomii AN EstSSR);
Tartu State University (Tartuskiy gosudarstvennyy universitet)

TITLE: Spectral distribution of radiation heat fluxes in the free atmosphere

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 2, 1966, 121-136

TOPIC TAGS: atmospheric thermodynamics, meteorologic model

ABSTRACT: In this study an attempt is made to explain some characteristic features of the field of radiation heat fluxes in the atmosphere of the middle latitudes and obtain an approximate picture of their spectral distribution in the spectral region 5-12 μ m. The authors have computed the spectral and vertical distribution of the intensity and fluxes of thermal radiation of the earth and atmosphere and the radiation heat fluxes for five models of the atmosphere: I. Standard atmosphere (ARDC-1959); II. Dry summer in the middle latitudes; III. Moist summer in the middle latitudes; IV. Dry winter in the middle latitudes; V. Moist winter in the temperate latitudes. Also considered is the dependence of radiant heat fluxes on the sighting angle. The paper includes a brief analysis of the results for the purpose of defining the principal features of the radiation heat fluxes as a function of spectral interval, height and model of the atmosphere. Orig. art. has: 9 figures, 4 formulas and 5 tables. [JPRS]

SUB CODE: 04 / SUBM DATE: 16Aug65 / ORIG REF: 002 / OTH REF: 017
Card 1/1 CC / UDC: 551.521.3

L 29261-66 --EWT(1) GW

ACC NR: AP6019346

SOURCE CODE: UR/0362/66/002/002/0121/0136

AUTHOR: Kondrat'yev, K. Ya.; Niylik, Kh. Yu.; Noorma, R. Yu. 23

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet);
Institute of Physics and Astronomy (Institut fiziki i astronomii AN EstSSR);
Tartu State University (Tartuskiy gosudarstvennyy universitet) B

TITLE: Spectral distribution of radiation heat fluxes in the free atmosphere

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 2, 1966, 121-136

TOPIC TAGS: atmospheric thermodynamics, meteorologic model

ABSTRACT: In this study an attempt is made to explain some characteristic features of the field of radiation heat fluxes in the atmosphere of the middle latitudes and obtain an approximate picture of their spectral distribution in the spectral region 5-12 μ m. The authors have computed the spectral and vertical distribution of the intensity and fluxes of thermal radiation of the earth and atmosphere and the radiation heat fluxes for five models of the atmosphere: I. Standard atmosphere (ARDC-1959); II. Dry summer in the middle latitudes; III. Moist summer in the middle latitudes; IV. Dry winter in the middle latitudes; V. Moist winter in the temperate latitudes. Also considered is the dependence of radiant heat fluxes on the sighting angle. The paper includes a brief analysis of the results for the purpose of defining the principal features of the radiation heat fluxes as a function of spectral interval, height and model of the atmosphere. Orig. art. has: 9 figures, 4 formulas and 5 tables. [JPRS]

SUB CODE: 04 / SUEM DATE: 16Aug65 / ORIG REF: 002 / OTH REF: 017
Card 1/1 CC UDC: 551.521.3

L 37695-66 EWT(1)/FCC/FSS-2 TT/GW

ACC NR: AP6019596

SOURCE CODE: UR/0293/66/004/003/0427/0438

AUTHORS: Kondrat'yev, K. Ya.; Gayevskiy, V. L.; Konashenok, V. N.; Reshetnikov, A. I.

ORG: none

TITLE: Lunar meteorological observatory for earth observations

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 3, 1966, 427-438

TOPIC TAGS: lunar base, ~~meteorology~~, lunar atmosphere, earth atmosphere, spaceborne atmospheric observation, ~~lunar base~~ atmosphere, ~~meteorology~~ ~~research facility~~, solar energy, cloud cover, meteorologic satellite

ABSTRACT: The advantages of observing the earth's atmosphere from a lunar base are analyzed. Among such advantages listed are: the absence of a lunar atmosphere; a continuous observation of the earth, inasmuch as the same lunar surface faces the earth at all times; and solar energy utilization. The two disadvantages associated with such an observatory are the excessive distance and periodic librations both in longitude and in latitude. The terrestrial area covered by one or more lunar observatories can be determined from sun-earth-moon position studies. The possibility of camera coverage and visual observation of the cloud cover in the earth's atmosphere is evaluated by reviewing existing TV and photographic methods used on weather satellites such as Nimbus. For a 2-km resolution a 12' visual angle is needed from a lunar-based TV camera. The study of spatial resolution over a 200 x 200-km area by thermal radiation sensors requires an angular resolution of 2'. Two other methods of some

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UDC: 551.501:523.3

L 37695-66

ACC NR: AP6019596

2

merit for observing cloud coverage are radar observation and a thermal balance of the terrestrial surface or its albedo. The important problem of determining the effect of solar activity on changes in the upper atmosphere is investigated. The respective advantages and disadvantages of weather satellites and lunar observatories are reviewed, and it is shown that a lunar observatory does not make weather satellites obsolete but instead supplements them. Orig. art. has: 5 figures and 5 formulas.

[04]

SUB CODE: 22, 04/03/SUBM DATE: 27 May 65/ ORIG REF: 003/ ATD PRESS: 5041

Card 2/2

ACC NR: AP6019511

SOURCE CODE: UR/0362/66/002/002/0121/0136

AUTHOR: Kondrat'yev, K. Ya.; Niylik, Kh. Yu.; Noorma, R. Yu.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet);
Institute of Physics and Astronomy, AN ESSR (Institut fiziki i astronomii AN ESSR);
Tartu State University (Tartuskiy gosudarstvennyy universitet)

TITLE: The spectral distribution of radiation heat inputs in free atmosphere

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 2, 1966, 121-136

TOPIC TAGS: heat radiation, temperature distribution, atmospheric radiation, atmospheric model, free atmosphere

ABSTRACT: The spectral and vertical distributions of radiation heat inputs to the atmosphere are calculated in the spectral range from 5 to 12 μ . Radiation heat inputs are determined for 5 variants of atmospheric models, selected on the basis of meteorological conditions characteristic for the temperate zones. The variation of radiation inputs as a function of sighting angle is also analyzed. A brief analysis is presented of the results in order to clarify the basic points of the change in radiation heat inputs as a function of the spectral interval, altitude, and atmospheric model. The radiation heat inputs in the atmosphere depend essentially on the selection of atmospheric model and on the location of the $\Delta\lambda$ interval in the spectrum. The data presented in this work are not accurate enough for a very precise analysis

Card 1/2

UDC: 551.521.3

ACC NR: AP6019511

"APPROVED FOR RELEASE: 06/19/2000

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of vertical and spectral distribution of heat inputs. Therefore, the development of new and perfected methods for computation of radiation heat flux, which would allow determination of this flux with sufficient accuracy at all altitudes in the atmosphere, is a very important problem. Orig. art. has: 4 formulas, 5 tables, and 9 figures.

SUB CODE: 04,20/ SUBM DATE: 16Aug65/ ORIG REF: 003/ OTH REF: 016

Card

2/2 *eqh*

L 09178-67

ACC NR: AP7002321

albedo, fluxes of long-wave radiation and the radiation balance, radiant heat flux, attenuation of direct solar radiation by an aerosol. For example, it was found that in summer the value of the aerosol component of attenuation of direct solar radiation was greater by a factor of approximately two than in the autumn and the atmosphere is more stratified. In autumn the principal maxima in the distribution of an aerosol are observed at heights of 2-3 and 15-18 km. In summer the maximum attenuation is at 1-2, 7-8, 10-12 and 18 km. In almost all the ascents above 24 km there was an appreciable increase of the aerosol concentration. Orig. art. has: 14 figures. [JPRS: 36,285]

SUB CODE: 04 / SUBM DATE: 19Oct65 / ORIG REF: 003 / OTH REF: 005

Card 2/2 net

L 07216-67 FSS-2/EWT(1)/EEC(k)-2 TT/GW

ACC NR: AP6024430

SOURCE CODE: UR/0362/66/002/007/0740/0757

AUTHOR: Kondrat'yev, K. Ya.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: Meteorological observations from manned spacecraft (review)

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 7, 1966, 740-757

TOPIC TAGS: meteorologic observation, spacecraft observation, meteorologic research facility

ABSTRACT: This is a review based on published data of the results of meteorological investigations derived from an analysis of visual observations, motion-picture films, and photographs of the earth made from space by astronauts. Primarily discussed are an interpretation of the data of cloud pictures (nephanalysis) and investigations of optical inhomogeneities of the troposphere and the stratosphere (brightness layers). As the basic components of a system of meteorological observations on a planetary scale the author names the following: 1) the aggregate of ordinary methods of observation (ground meteorological, aerological, radiometeorological, ship-board, aircraft observations, etc); 2) weather satellites; 3) a system of meteorological sounding balloons, buoys, and ground automatic meteorological stations in combination with satellites which collect and transmit information; 4) manned orbital space laborato-

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ACC NR: AP6024430

ries; and 5) a lunar meteorological observatory for observations of the earth. Of these five components of a system of meteorological observations on a planetary scale the first three are most important and the role of manned orbital space laboratories and the lunar meteorological observatory are secondary although quite essential. The author points out in connection with manned orbital space laboratories that the participation of the astronaut in accomplishing scientific programs on board a satellite has advantages in that the objects of investigation can be selected, the complex equipment can be directly monitored, new instruments can be tested, and visual observations can be made. In conclusion the author states that although the prospects of meteorological observations on board orbital spacecraft are quite extensive and diverse, appreciable time will be needed before the possibilities of such observations from space will be realized. Orig. art. has: 4 formulas, 2 tables, and 15 figures.

SUB CODE: 04/ SUBM DATE: 29Jan66/ ORIG REF: 011/ OTH REF: 013

Card 2/2

ACC NR: AP7013730

SOURCE CODE: UR/0050/66/000/001/0048/0051

AUTHOR: Kondrat'yev, K. Ya. (Professor)

ORG: none

TITLE: Relationship between outgoing thermal radiation and the field of the mean temperature of the troposphere and lower stratosphere

SOURCE: Meteorologiya i gidrologiya, no. 1, 1966, 48-51

TOPIC TAGS: troposphere, thermal radiation, stratosphere, atmospheric temperature, weather map, atmospheric radiation, radiometer

SUB CODE: 04

ABSTRACT: This is a brief review containing a discussion of recent results of study of the relationship between thermal radiation and the field of the mean temperature of the troposphere and the lower stratosphere. Particular attention is given to a study by Nordberg, Bandeen, Warnocke and Kunde (Goddard Space Flight Center, X-651-64-115, May 1964). The article contains four maps: 1) Planetary distribution of effective temperature in the 15-micron carbon dioxide band, averaged for the week 19-25 June 1963; 2) Planetary distribution of effective temperature in the 15-micron region of the carbon dioxide band averaged for the

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KONDRATYEV, Kh. I.

USSR/ Chemistry - Organic chemistry

Card 1/1 Pub. 22 - 24/52

Authors : Shostakovskiy, M. F.; Kondratyev, Kh. I.; and Belyayev, V. I.

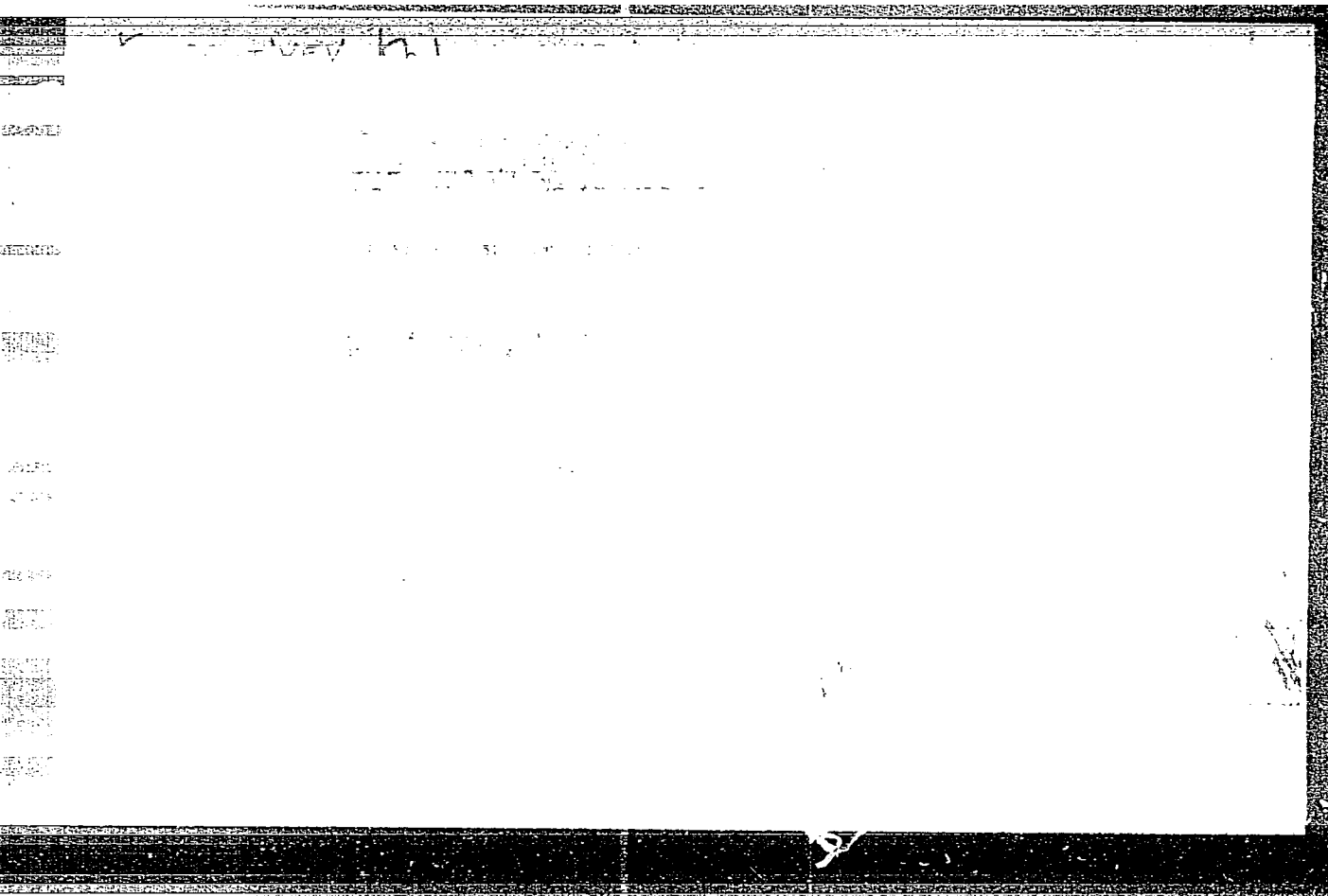
Title : Synthesis and conversion of oxygen-containing silico-organic compounds

Periodical : Dok. AN SSSR, 100/2, 287-290, Jan 11, 1955

Abstract : Experimental data are presented regarding the synthesis of n-butyl-, iso-butyl-, secondary-butyl-, and tertiary-butyl-dimethylphenylsilane acetals. A study was made of the chemical properties of mixed silico-organic acetals, i. e. acetals containing alcohol and silanol radicals, and it was found that they are much closer to the alkylaryl acetals and that their symetrization is accompanied by a series of other reactions. The presence of a tautomerism in silico-organic acetals was established by their thermal decomposition characteristics. Ten USSR references (1943-1954).

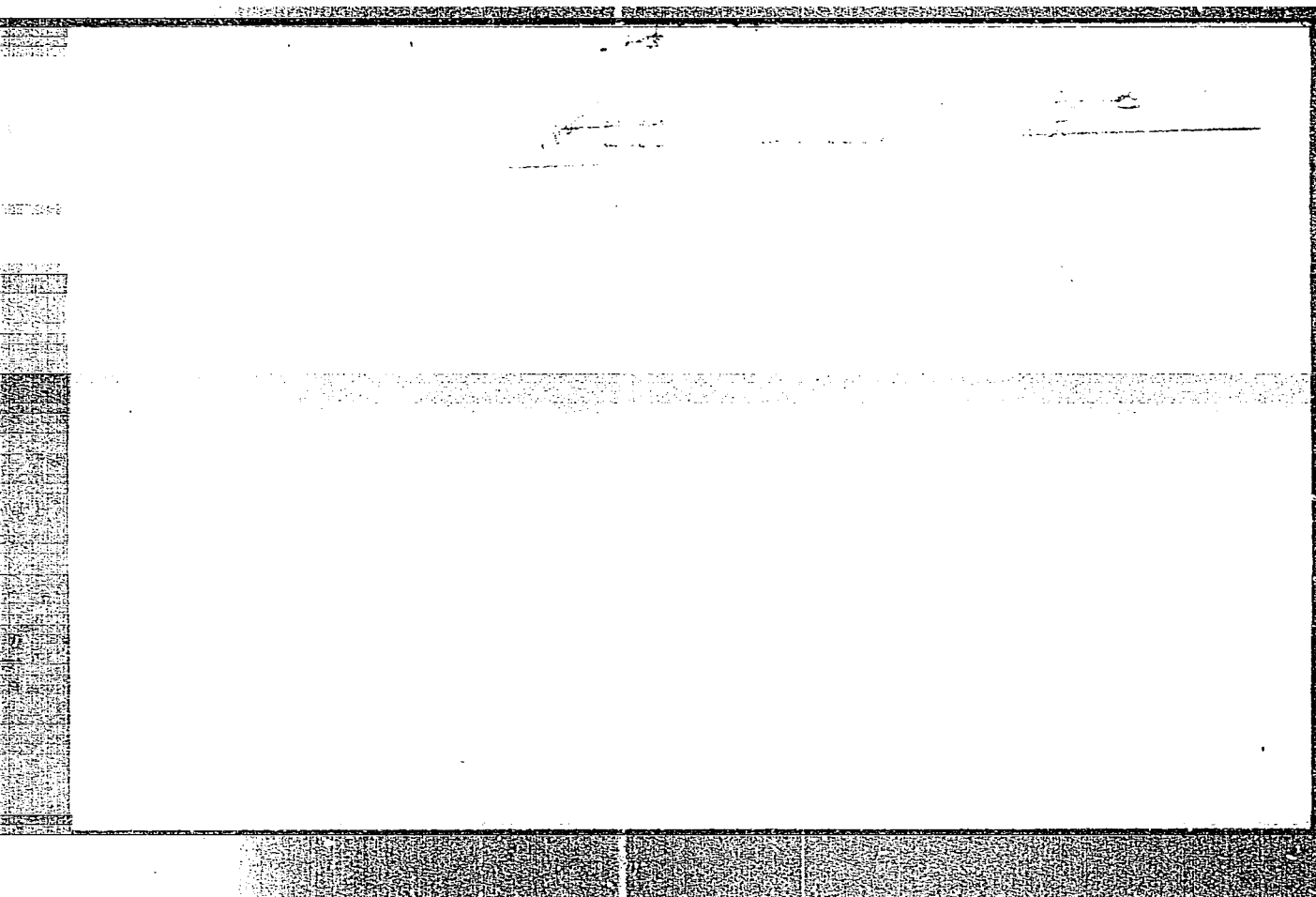
Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organic Chemistry

Presented by : Academician B. A. Karanickiy, July 19, 1954



"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824210018-5



APPROVED FOR RELEASE: 06/19/2000

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С. МАРАТ'УЕВ К. И.

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KONDRAT'YEV, Kh. I.

SHOSTAKOVSKIY, M.F.; KONDRAT'YEV, Kh. I.

Synthesis and transformation of organic compounds containing oxygen and silicon. Report No.7: Synthesis of dimethyl- α -naphthyl-, methyl- α -dinaphthyl-, ethyl- α -dinaphthyl- and α -trinaphthylsilanols. Izv.AN SSSR.Otd.khim.nauk no.3:319-324 Mr '57. (MLRA 10:5)

1.Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR.

(Silanols)

5 (3)

AUTHORS: Shostakovskiy, M. P., Kondrat'yev, Kh. I. SOV/62-59-6-15/36

TITLE: Investigations in the Field of Synthesis and Transformations of Oxygen Containing Silicon Organic Compounds (Issledovaniye v oblasti sinteza i prevrashcheniy kislorodsoderzhashchikh kremneorganicheskikh soedineniy). Communication 8. Synthesis and Study of the Properties of Low Molecular Ethers of the Methyl- α -naphthylsilandiol (Soobshcheniye 8. Sintez i izucheniye svoystv nizkomolekulyarnykh efirov metil- α -naftilsilandiola)

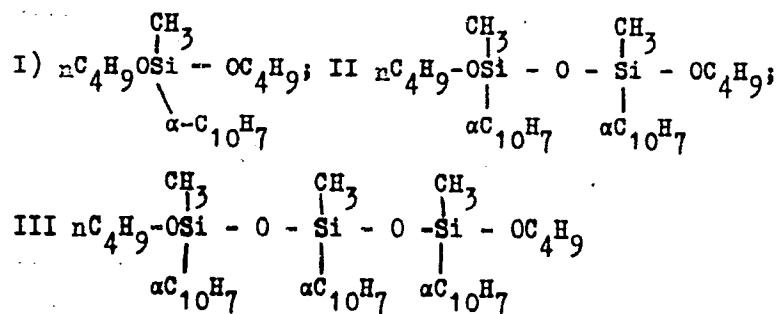
PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 6, pp 1041 - 1048 (USSR)

ABSTRACT: The different possibilities of synthesizing the derivatives of the compound mentioned in the first title, which are well known from publications, are dealt with in brief (Refs 1-11). The synthesis carried out by the authors is based upon a possible analogous reaction (Ref 14) between alcohols and silanols (Refs 12,13 polysilicon acid with alcohols), and is carried out by reaction between silandiols and alcohols, which was not yet described in publications. This reaction is of both theoretical and practical interest. As the aromatic silandiols are only weakly acid, they react with alcohol without catalysts. This

Card 1/3

Investigations in the Field of Synthesis and Trans- SOV/62-59-6-15/36
formations of Oxygen Containing Silicon Organic
Compounds. Communication 8. Synthesis and Study of the Properties of Low
Molecular Ethers of the Methyl- α -naphthylsilandiol

property was investigated with the compounds mentioned in the
title and buthylalcohols. The following was obtained simul-
taneously: dibuthylether of the methyl- α -naphthylsilandiol (I),
dibuthylether of disiloxane (II), dibuthylether of trisiloxane
(III), and an imperfect buthyl ether of tetrasiloxane (IV):



Card 2/3

IV containing another more Si-O.

Investigations in the Field of Synthesis and Transformations of Oxygen Containing Silicon Organic Compounds. Communication 8. Synthesis and Study of the Properties of Low Molecular Ethers of the Methyl- α -naphthylsilandiol SOV/62-59-6-15/36

The reaction scheme is given. The yield in the compounds mentioned depends upon temperature, mixing intensity, the ratio of initial components, reaction time, and upon the pressure applied. Thus, it is of considerable importance with respect to the yield that the synthesis of di-n-buthylether is carried out in a vacuum. The syntheses are described in detail in the experimental part. The results obtained within the course of the synthesis (separation of the products and determination) are given in tables 1 and 3. Table 2 contains the physical characteristics of the different substances that were synthesized. There are 3 tables and 15 references, 8 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: August 5, 1957

Card 3/3

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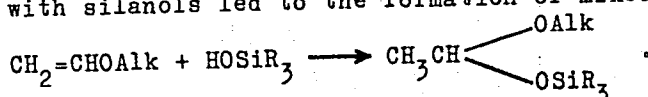
S/079/60/030/010/003/030
B001/B075

AUTHORS: Shostakovskiy, M. F., Kondrat'yev, Kh. I., and Gorban', A.K.

TITLE: Investigation in the Field of Synthesis and Conversions of Oxygen-containing Organosilicon Compounds. IX. Synthesis of Organosilicon and Naphthyl-containing Acetals

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 10, pp. 3183-3186

TEXT: In Ref. 1 the authors showed that the reaction of vinyl alkyl ether with silanols led to the formation of mixed trialkyl silyl alkyl acetals:



The subject of the present paper is the reaction of vinylethyl, vinylisopropyl, and vinyl-n-butyl ethers with α -naphthyl dimethyl silanol (I). Compound (I) was obtained by hydrolyzing the acetic acid ester of α -naphthyl dimethyl silanol. Shostakovskiy and his collaborators (Ref. 1) have found that, due to an ionic mechanism, vinyl alkyl ether reacted

Card 1/2

VETLOV, I.P., kand.fiz.-matem.nauk; GAYEVSKIY, V.I., kand.fiz.-matem.nauk;
GUSEVA, L.N.; IMBROVSKAYA, Ye.P.; KONDRAT'YEV, K.Ya., prof.;
NORDEERG, V., doktor (Soyedinennyye Shtaty Ameriki); TER-MARKARYANTS,
N.Ye., kand.fiz.-matem.nauk

Experience in the analysis of the infrared image of cloud cover
obtained by means of the "Nimbus-3" meteorological satellite.
Meteor. i gidrol. no.9:20-26 S '65.

(MIRA 18:8)

1. Glavnaya geofizicheskaya observatoriya; Leningradskiy gosudarstven-
nyy universitet i Mirovoy meteorologicheskiy tsentr.

L 3769-66 FSS-2/EWT(1)/FS(v)-3/FCC TT/GS/GW

ACCESSION NR: AT5023638

UR/0000/65/000/000/0555/0568

AUTHOR: Kondrat'yev, K. Ya.

TITLE: Interpretation of radiation data from meteorological satellites

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 555-568

TOPIC TAGS: meteorology, meteorologic satellite, atmospheric movement, cloud formation, earth radiation, optic albedo

ABSTRACT: Radiation data on the energy processes in the earth's atmosphere from satellites are discussed. To understand some of the large-scale atmospheric processes, the radiation data from various weather observation satellites (such as the Tiros series) are analyzed according to the radiation balance

$$R_s = Q_0(1 - A_s) - F_{\infty}$$

where Q_0 is the solar radiation arriving at the upper layers of the atmosphere, A_s is the earth albedo, F_{∞} is the long wavelength radiation from the earth. A plot of F_{∞} versus latitude shows a minimum at the equator, two

L 3769-66

ACCESSION NR: AT5023638

maxima at subtropical latitudes ($\pm 30^\circ$), followed by a continuous drop toward the poles. The corresponding albedo curve shows almost a mirror image to the above earth radiation curve, indicating that the minimum at the equator is probably due to excessive cloud cover with correspondingly lower surface temperatures at the equator than at the subtropics. Infrared measurements by the aid of these satellites further corroborate this hypothesis. Cloud cover measurements by infrared radiation data from satellites can be used to estimate atmospheric movements, especially in the form of hurricane wind forecasts. It is shown that all this radiation data obtained by weather satellites must be subjected to two types of correction: one caused by radiation absorption from atmospheric humidity and the other, high altitude clouds. This in turn will depend on the type of atmospheric model one uses to interpret data. Three such models are selected, and the variation in the estimate of earth surface temperatures compared for each case using various moisture correction estimates. Finally, it has been found that there is a direct correlation between cloudiness and vertical atmospheric movements. This can further help weather stations in their forecasting using satellite radiation measurement data. Orig. art. has: 10 figures, 1 table, and 1 formula.

Card 2/3

L 3769-66

ACCESSION NR: AT5023638

ASSOCIATION: none
From: (11-13-65) Conference on Soviet Rights

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: ES

NO REF SOV: 004

OTHER: 010

CC

Card 3/3

L 2174-66 EWT(1)/FCC GW

ACCESSION NR: AP5022918

UR/0362/65/001/009/0929/0940
551.521.31

AUTHOR: Kendrat'yev, K. Ya.; Burgova, M. P.; Mikhaylov, V. V.; Grishechkin, V. S.
44.55 44.55 44.55 44.55

TITLE: Spectral composition of shortwave solar radiation

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 9, 1965,
929-940

TOPIC TAGS: atmospheric transparency, solar spectrum, spectrophotometer, solar
radiation scattering, direct solar radiation

ABSTRACT: The article continues an extensive experimental study of the shortwave radiation field at the level of the Earth's surface; it discusses a technique for measuring the spectral fluxes of total and scattered radiation in absolute energy units. The absolute calibration of the spectrophotometer used for the visible portion of the spectrum is described. Results of expeditionary measurements of spectral fluxes of direct, scattered, and total radiation are given, as are the spectral transparency of the atmosphere and spectral brightness of the sky in the 0.3-0.95 μ range. A preliminary analysis of the applicability of approximate calculated data to the description of the shortwave radiation field is presented.

Card 1/2

L 2174-66
ACCESSION NR: AP5022918

"The authors take this opportunity to express their thanks to G. F. Sitnik."
Orig. art. has: 11 figures, 5 tables, and 17 formulas. *44, 55*

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University) *44, 55*

SUBMITTED: 19Feb65

ENCL: 00

SUB CODE: AA, ES, OP

NO REF SOV: 010

OTHER: 003

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Card 2/2

L 2010-66 EWT(1)

ACCESSION NR: AP5026053

UR/0293/65/003/005/0730/0736
551.521.2

AUTHOR: Kondrat'yev, K. Ya.; Fedorova, M. P.

TITLE: Approximate evaluation of the influence of the albedo on the flux of outgoing shortwave radiation

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 730-736

TOPIC TAGS: shortwave radiation, albedo, isotropic radiation, zenithal distance, atmospheric layer, optical depth, solar constant

ABSTRACT: The intensity of outgoing shortwave radiation from the earth-atmosphere system depends upon the albedo of the emitting surface. A significant deviation from isotropic processes was observed at great zenithal distances of the sun and a small albedo of the ground. This circumstance was detected by instrumental data obtained at a height of 300 km. The earth's surface was seen from the instrument at a solid angle of 150° which covers an area of the earth's surface equal to ten million square kilometers and within which various albedos of ground and clouds occur. The albedo of clouds was assumed to be equal to 0.80. When the sky is only partially covered with clouds, the reflecting surfaces are at various levels and are not equally weak-

Card 1/2

L 2010-66

ACCESSION NR: AP5026053

0
ened by atmospheric layers. Computations of fluxes of outgoing radiation have been made for two solar zenithal distances, two optical depths of the atmosphere, and with a given angle of inclination to the horizontal plane and the azimuthal direction. Computation results are given in a table and represented graphically in the original article. The solar constant was taken to be equal to $2.0 \text{ cal/cm}^2 \text{ mm}$. Results obtained by this computations differ from those obtained for an isotropic radiation field. Orig. art. has: 4 figures and 1 table. [EG]

ASSOCIATION: none

SUBMITTED: 19Nov64

ENCL: 00

SUB CODE: E5AA

NO REF SOV: 003

OTHER: 000

ATD PRESS: 4115

Card 2/2 DP

L 3643-66 FSS-2/ENT(1)/FS(v)-3 TT/GW
ACCESSION NR: AP5026268

UR/0050/65/000/011/0057/0061
551.521

AUTHOR: Kondrat'yev, K. Ya. (Professor)

TITLE: Outgoing radiation and the radiative heat influx

SOURCE: Meteorologiya i gidrologiya, no. 11, 1965, 57-61

TOPIC TAGS: outgoing radiation flux, artificial satellite, radiation influx, correlation coefficient, longwave radiation, effective radiation, heat influx, effective temperature

ABSTRACT: The flux of outgoing radiation measured by artificial satellites may be used for determining the radiating influx into the whole atmosphere. K. Ya. Kondrat'yev discussed results obtained and published by such U. S. scientists as P. A. Davis, S. Fritz, P. K. Rao, J. London, and others, and he used their tables. Special attention is paid to the value of the correlation coefficient. The outgoing longwave radiation depends upon the height of the upper limit of clouds, and the effective radiation of the earth's surface depends upon the lower limit of clouds. The maximum heat influx takes place when the earth's surface is covered with fog. The correlation between the outgoing radiation and the heat influx is variable. A spec-

Card 1/2

L 3643-66

ACCESSION NR: AP5026268

ial table contains correlation coefficients for reflected solar radiation, solar radiation absorbed by the atmosphere, and for the effective temperature. This table is based on data obtained by the satellite Tiros III. Orig. art. has: 3 tables.

[EG]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: ESAA

NO REF SOV: 001

OTHER: 005

ATD PRESS: 4116

beh

Card 2/2

L 3882-66 EWT(1) GW

ACCESSION NR: AT5025228

UR/2531/65/000/170/0071/0087

AUTHOR: Kondrat'yev, K. Ya.; Ter-Markaryants, N. Ye.
44, 55 44, 55

TITLE: Detection of cloudiness on the night side of the earth from measurements of the departing thermal radiation in the "water-vapor window" region

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 170, 1965. Issledovaniye radiatsionnykh protsessov v atmosfere (Investigation of radiation processes in the atmosphere), 71-87

TOPIC TAGS: IR radiation, earth radiation, atmospheric cloud

ABSTRACT: The authors calculate the intensity of the thermal radiation leaving the surface of the earth in the spectral region from 8 to 12 μ under clear skies and when there are clouds at various levels. The values of contrast between the radiation temperature of the underlying surface and of the clouds are determined for several points situated in various climatic regions of the USSR. The method used for calculating the intensity of departing radiation is explained in detail. It is shown that it is much more difficult to detect cloudiness from data on infrared radiation in the winter than in the summer. All the calculations are based on

Card 1/2

L 3882-66

ACCESSION NR: AT5025228

meteorological data averaged over several years. In each specific case, the meteorological quantities considered may differ from their average values, which results in contrasts between the radiation temperature of the underlying surface and that of the clouds which differ from the average values obtained. It is proposed that a further study should be made of possible deviations in the initial meteorological quantities from their average values to evaluate temperature contrast limits and estimate the probability of detecting cloudiness of some type in a given place at a given time. This will require statistical methods of analysis. Orig. art. has: 5 figures, 5 formulas, 12 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory)

SUBMITTED: 00

ENCL: 00

SUB CODE: ES

NO REF SOV: 005

OTHER: 004

BVK.

Card 2/2

L 3869-66 EWT(1) GW

ACCESSION NR: AT5025241

UR/2531/65/000/170/0192/0201

AUTHOR: D'yachenko, L. N.; Kondrat'yev, K. Ya.

TITLE: Distribution of the long-wave balance of the atmosphere around the earth

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 170, 1965. Issledovaniye radiatsionnykh protsessov v atmosfere (Investigation of radiation processes in the atmosphere), 192-201

TOPIC TAGS: cartography, atmospheric convection, atmospheric thermodynamics, earth radiation

ABSTRACT: The long-wave balance of the atmosphere is defined as the difference between the effective radiation at the surface of the earth and the departing radiation at the upper boundary of the atmosphere. This characteristic is calculated and maps are plotted for the monthly and annual distribution of the long-wave balance of the atmosphere for the entire globe. In making the maps, data from 258 points uniformly distributed about the surface of the earth were used. 163 of these stations were on dry land and 95 were on the sea. The regions above 80° N latitude and below 70° S latitude and high-altitude regions were not taken into consideration due to

Card 1/2

L 3869-66

ACCESSION NR: AT5025241

3
lack of data. The total area covered by the maps was 460.1 km². An analysis of the maps for annual totals of the long-wave balance of the atmosphere shows a variation from 100 Kcal/cm² a year in the polar latitudes to 160 Kcal/cm² a year in the equatorial latitudes. The isolines are directed in most cases along the lines of latitude. Breaks in the isolines at the land-sea boundaries indicate horizontal nonuniformities in the temperature field. An analysis of the monthly maps for the long-wave balance of the atmosphere shows the highest absolute values over the oceans in the equatorial region. In July the maximum heat flux is shifted somewhat to the north of the equator, and in January the maximum is slightly south of the equator. The maximum is more than 12 Kcal/cm² per month (more than 13 Kcal/cm² per month over the Pacific Ocean). The effective surface radiation apparently has little effect on the heat flux into the atmosphere over the oceans. Over the continents on the other hand the effective surface radiation is the basic factor which determines the long-wave balance of the atmosphere. It is pointed out that the maps given in this paper are extremely sketchy due to the limited number of stations and the lack of direct measurements of the long-wave balance of the atmosphere to serve as a control. Orig. art. has: 5 figures, 1 table.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory)

SUBMITTED: 00

ENCL: 00

SUB CODE: ES 44,55

NO REF SOV: 002

OTHER: 000

Card 2/2

L 00100-07 EMP(m)/EMI(d)/EMI(m)/EMI(l) 45

ACC NR: AP6027445

(A)

SOURCE CODE: UR/0259/66/000/007/0020/0021

AUTHOR: Kondrat'yev, L.; Kalitkin, A.; Bcytsov, A.

ORG: Scientific Research Institute of Civil Aviation (Nauchno issledovatel'skiy institut grazhdanskoy aviatsii)

TITLE: New application for aircraft engines

SOURCE: Nauka i tekhnika, no. 7, 1966, 20-21

TOPIC TAGS: turboprop engine, airfield clearing, airfield maintenance equipment, agricultural machinery, AIRCRAFT ENGINE / AI-20 TURBOPROP ENGINE

ABSTRACT: The Riga Gas-Turbine Engine Laboratory, headed by Candidate of Technical Sciences A. Dobrokhotoy, has developed new applications for used AI-20 turboprop aircraft engines. These engines, which produce high temperatures and high-velocity airstreams, are utilized in different branches of the national economy. The AI-20 engines are used in agriculture to dry grain, corn, cotton, wool, and other agricultural products. At airports they are used to clean snow, ice, and rubbish from flight lines, platforms, and taxiways and to deice aircraft. The AI-20 engines are placed on special racks on D-452 tractors or APK-6 airport trucks. They are used as power plants for driving mobile electric power stations and as compressor units in the oil- and gas-mining industries. Operating on kerosene or diesel fuel, the electric power stations produce 600 to 800 kw of electricity. Orig. art. has: 3 figures

SUB CODE: 21, 01/ SUBM DATE: none

Card 1/1

VERSHINSKIY, A., inzh.-podpolkovnik, kand.tekhn.nauk; KONDRAT'YEV, L.,
inzh.-podpolkovnik, kand.tekhn.nauk

Autonomous navigation in a space flight. Av.i kosm. 46 no.7:
20-25 J1 '63. (MIRA 16:8)
(Navigation (Astronautics))

3

KONDRAT'YEV L.A.

KONDRAT'YEV, L.A.; KOVALIKHINA, N.F., tekhnicheskii redaktor

[Principles of planning wooden bridges and examples of making calculations] Osnovy proektirovaniia i primery rascheta derevian-nykh mostov; uchebnoe posobie. Moskva, Ministerstvo avtomobil'-nogo transporta i shosseinykh dorog SSSR, 1954. 311 p. (MLRA 7:9)
(Bridges, Wooden)

KONDRAT'YEV, L. A.

"Elements of Projecting and Examples of Computations of Wooden Bridges (Osnovy Proektirovaniya i Primery Raschetov Derevyannykh Mostov)", published by the Automobile Transport Publishing House, Ministry of Automobile Transport and Highways, USSR, Moscow, 1954.

Translation of table of contents and a summary - D 113587, 30 Nov 54

14(0)

PHASE I BOOK EXPLOITATION

SOV/2932

Kondrat'yev, Leonid Alekseyevich

Osnovy proyektirovaniya i primery rascheta derevyannykh mostov (Fundamentals of Designing and Examples of Calculations of Wooden Bridges) 2d ed. Moscow, Avtotransizdat, 1959. 285 p. Errata slip inserted. 5,500 copies printed.

Ed.: A. F. Sergeev; Tech. Ed.: N. V. Mal'kova.

PURPOSE: This textbook is intended for students of technical schools specializing in the construction of wooden bridges for motor vehicle traffic. It can also be recommended to technicians working for organizations in charge of road building and road maintenance.

COVERAGE: The book describes methods of constructing timber bridges on roads for motor vehicle traffic. It contains recommendations on how technical papers for such a project should be prepared and presented. Specifications for designing a timber bridge and its approaches are given, as well as examples for designing and calculating the structural elements. Allowable stresses, clearances, and sagging are considered. Joints of different types, bridge beams, subflooring, and floors covered by gravel or asphalt are described. Design patterns for bridge spans, supporting foundations, trestles, trusses, cross-bar structures and grillages are presented. No personalities are mentioned. There are no references.

Card 1/5

Fundamentals of Designing (Cont.)

SOV/2932

TABLE OF CONTENTS:

Foreword	3
Ch. I. Essential Information and Standard Specifications for Designing Bridges	
1. General information	5
2. Technical classification of highways	6
3. Technical classification of rivers and height of bridge clearance	7
4. Railroad clearances	8
5. Bridge clearances on highways	8
6. Analysis of loads	10
7. Specifications for designing a bridge and its approaches	17
Ch. II. Basic Principles in Planning and Making Estimates. Examples of Formulating Technical Documentation in Drawing up Plans	
1. Basic principles for developing a project and making estimates	23
2. Method of preparing a project for constructing a bridge	27
Ch. III. Standards, Calculations and Designs, of Highway Timber Bridges	
1. Allowable stress and sagging	48
2. Analysis of timber structure elements under construction	51
3. Analysis of joints of elements in timber structures under contraction	53
4. Analysis of elements under tensile stress	55

Card 2/5

Fundamentals of Designing (Cont.)

SOV/2932

5. Analysis of joints of elements under tensile stress	57
6. Analysis of bended timber beams of the ordinary type, compound type, and sectional type	58
7. Joints with dowels or nails	77
Ch. IV. Analysis of Roadway Elements	
1. Single-deck flooring	79
2. Analysis of subflooring with upper longitudinal lumber floor	81
3. Analysis of subflooring with gravel or asphalt cover	82
4. Analysis of double timber floor	83
5. Analysis of a floor built of planks laid edgewise	84
6. Analysis of cross ties	87
Ch. V. Analysis of Supporting Structures of Bridges With Small Spans	
1. Pattern of designing spans made of timber	91
2. Example of analysis of a span	94
3. Analysis of joints	98

Card 3/5

Fundamentals of Designing (Cont.)

SOV/2932

4. Analysis of spans made with consideration of elastic load distribution	102
5. Example of analysis for small spans made with consideration of elastic load distribution	103
Ch. VI. Analysis of Supports Made of Timber	
1. General information	109
2. Example of analysis of supporting piles	110
3. Analysis of foundation support	115
4. Example of analyzing space supports for spans with trusses devised by Gau-Zhuravskiy	116
Ch. VII. Designing Span Structure With Grillage Trusses Made of Timber	
1. Designing of roadway section of a span with trusses	130
2. Determination of coefficients for transversal elements of spans having grillage trusses with upper and lower roadway	137
3. Determination of stress in elements (belts and grillage) of differently designed trusses, which stress is caused by vertical load	140
Ch. VIII. Designing of Span Structures Provided With Trusses Devised by Gau-Zhuravskiy	
Designing of roadway section	151
Designing of main trusses	159

Card 4/5

KONDRAT'YEV, Leonid Alekseyevich; IVANOVSKAYA, K.M., red.;
BODANOVA, A.P., tekhn. red.

[Assembling prefabricated reinforced concrete bridges] Mon-
tazh sbornyykh zhelezobetonnykh mostov. Moskva, Avtotransiz-
dat, 1963. 18 p. (MIRA 16:6)

(Bridges, Concrete)

KONDRAT'YEV, L.F.; MARCHENKO, V.P., red.; RYABOVA, O.A., red. izd-
va; SHEVTSOV, S.V., tekhn. red.

[Planning and practicing economy at the present stage of the
building of communism] Planirovanie i reshim ekonomii na
sovremennom etape kommunisticheskogo stroitel'stva. n.p.
Rosvuzizdat, 1963. 45 p. (MIRA 16:7)
(Russia--Economic policy)

L 00018-66 EWT(a)

ACCESSION NR: AP5021371

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621.374.32

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AUTHOR: Brovchenko, V. G.; Kondrat'yev, L. G.

TITLE: Decatron scaler

SOURCE: Pribery i tekhnika eksperimenta, no. 4, 1965, 229-230

TOPIC TAGS: electronic circuit, clock

ABSTRACT: This note describes in some detail the triggering and operation of a decatron scaling section shown in Fig. 1 of the Enclosure. It discusses the time constant of the pulse front and shows the pulse shape in the case of presence and absence of the diode D₁. The circuit is designed for use in electronic clocks. /
Orig. art. has: 2 figures.

ASSOCIATION: Institut atomnoy energii GKAE, Moscow (Institute of Atomic Energy, GKAE)

SUBMITTED: 06Jun 64

ENCL: 01

SUB CODE: EC

NO REF SOV: 001

OTHER: 000

Card 1/2

L-00017-66

ACCESSION NR: AP5021375

UR/0120/65/000/004/0236/0237
621.317.31

AUTHOR: Brovchenko, V. G.; Kondrat'yev, L. G.

TITLE: Ion current integrator

SOURCE: Pribery i tekhnika eksperimenta, no. 4, 1965, 236-237

TOPIC TAGS: integrator circuit, ion current, electronic circuit

ABSTRACT: This brief note describes the operation of the ion integrator shown in Fig. 1 of the Enclosure and of the integrator scaler shown in Fig. 2. Orig. art. has: 1 formula and 2 figures.

ASSOCIATION: Institut atomnoy energii GKAE, Moscow (Institute of Atomic Energy, GKAE)

SUBMITTED: 06Jun64

ENCL: 02

SUB CODE: EO, EP

NO REF SOV: 002

OTHER: 001

Card1/3